

Original Communications.

THE SURGICAL TREATMENT OF CHRONIC NASAL CATARRH.*

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NEW YORK.

UNTIL recently few diseases have given rise to more dissatisfaction in their treatment than chronic nasal catarrh. Nor does this seem strange when we learn that the practice of posterior rhinoscopy, the most important of all nasal examinations in diagnosing the extent and chronicity of this disease, and performing the necessary operations for its radical cure, is seldom practised even by the specialist abroad, and is largely confined to the laryngologist in this country.†

I would also attribute much of the failure which has followed the treatment of chronic nasal catarrh to the slight importance that is attached to an intelligent differentiation of the various conditions found in this disease, the recognition of which is of pre-eminent importance in the determination of the best means for relief or cure. Dr. Frederic I. Knight, instructor of laryngoscopy in Harvard University, in an article devoted to the consideration of one of the operations‡ I propose to present to you this evening, mentions nasal catarrh as one of the opprobria medicinæ. "The physician," he writes, "felt annoyed on being asked to prescribe for it, and perhaps almost vexed with his patient for having such a thing. The patient, deriving no relief from sniffing up salt water or chlorate of potash, soon took to empirical remedies, and the worst sufferers have usually tried faithfully all the vaunted specifics in turn." He adds that "the removal of these (turbinate) hypertrophies constitutes one of the greatest advances yet made in the treatment of the affections of this region (nares)."

I recognize and will speak of five tissue formations which occur with unequal frequency in chronic nasal catarrh, but whenever found are invariably associated with the disease. They are hypertrophy of the tissues over the turbinated bones, thickening of the tissues over the nasal septum, deviation of the cartilaginous septum, gelatinous polypi and adenoma of the vault of the pharynx.

Chronic nasal catarrh is always accompanied by hypertrophic changes of the intra-nasal tissues; hence the disease is frequently termed Hypertrophic Nasal Catarrh. The principal tissues involved in these inflammatory changes are those overlying the turbinated bones. There is never any difficulty in diagnosing pure turbinated hypertrophies. They may of course involve any or all of the three turbinated bones. They generally show themselves as smooth white or light pink masses of tissue encroaching more or less upon the normal calibre of the nostril, and can always be recognized by their gross appearance. Should, however, engorgement of the turbinated tissues have occurred previous to the examination, the determination of the amount of simple hypertrophy may sometimes prove difficult, for it will be largely masked by the congestion.

When there is any uncertainty in these cases, it

is often advisable to wait rather than take the risk of removing undiseased tissue.

Congestive hypertrophies, however, are, as a rule, readily recognized.

I do not consider every permanent enlargement of the turbinated tissues an hypertrophy. The physiological alterations in shape and size of normal turbinated tissue is transient in its nature, and dependent, more or less, upon the degree of irritation to which it is subjected. Hence there must be a continuous progression and retrogression in these tissues as a part of their physiological function. It is only necessary to watch the movements of turbinated tissues, irritated by means of a probe, to be convinced of this. Careful observation has induced me to believe that, in many cases of so-called hypertrophy of the turbinated tissues, the increase in size is due more to a loss of retractile power—a sort of paresis—than to distinct pathological changes in the substance of these erectile structures. This will serve to explain the existence of large, soft, sessile anterior and posterior hypertrophies, which, under the microscope, show a remarkable distention of the turbinated corpora cavernosa. These cavernous sinuses, after section with the wire, pour out the contained blood, and collapse without further hemorrhage; in this respect widely differing from the true turbinated hypertrophy, so liable to bleed, as does also the normal turbinated tissue.

Hypertrophy of the turbinated tissue, though slight in the recent stage of the catarrhal affection, steadily increases with a rapidity depending upon the degree of irritation and congestion to which the nasal mucous membrane is subjected, until, as sometimes happens, the nasal tissues will be found to have enlarged to such an extent as to completely block up the posterior nares. Owing to their inferior position, *the tissues over the lower turbinate become more hypertrophied than those over the other bones.*

Indeed, so great is this tendency of the inferior turbinate to become hypertrophied, that I have been induced to adopt the rule of looking for an increase in its dimensions as an indication of the extent and chronicity of the disease. This peculiarity, I think, may be largely attributed to the action of acrid nasal secretions collected about and retained in contact with their surfaces; on account of the obstruction in the nares, the removal of this secretion is rendered extremely difficult or even impossible, as the means usually made use of for that purpose, that of forced inspiration and expiration, cannot here be brought into play. Hence a slight amount of hypertrophy of the tissues over this bone is often met with when there is no perceptible increase in the size of the others.

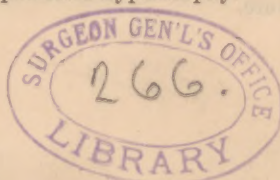
Hypertrophy of the tissues over the posterior portions of the turbinated bones is more frequently met with than any of the other forms of hypertrophy.

Posterior turbinated hypertrophy is of such common occurrence that I have been forced to recognize it as a distinct peculiarity of the disease, especially when it is connected with enlargement of the inferior turbinate. It is more frequently found standing alone in the summer than in the winter months. Occasionally, however, the tissues over the anterior parts of the turbinated bones will be found to be hypertrophied to a considerable extent, while the deeper portions are but slightly affected. I have therefore divided hypertrophy of the tissues over the turbinated bones into two varieties—*anterior and posterior hypertrophy.*

* Read before the Medical Society of the County of New York, May 22, 1882.

† Wm. N. Daly, M.D., Archives of Laryngology, April 1, 1882.

‡ Philadelphia Medical News, January 21, 1882.



As the surgical treatment of each variety is different, the division will be found a convenient one.

Next in the order of my divisions comes thickening of the tissues over the septum.

I know my making special mention of this peculiarity as an important feature of the disease may cause some surprise, but my convictions do not come from sudden inspiration, they are the result of careful study, comparison, and experiment. By the phrase hypertrophy of the tissue over the septum, I at once do away with a large proportion of the so-called cases of deflection of the septum. In adult patients these thickened tissues can sometimes be traced as resulting from an insignificant nodule of projecting cartilage in early life, perhaps the result of an injury. This cartilaginous spur, however, would be of much consequence in the nose of a child, since the small size of its nostril would tend to bring about contact with the turbinated structures opposite, producing an irritative hypertrophy, its size depending upon the extent and chronicity of the local sub-inflammatory process.

We may also have localized thickenings of the mucous membrane, over the cartilaginous septum and vomer, resulting from the direct pressure of hypertrophies or frequently tumefied turbinated tissue.

A certain amount of turbinated hypertrophy is always discoverable in these cases, and the thickened tissues lying opposite are usually localized and correspond in their extent with the amount of turbinated hypertrophy.

This drawing is enlarged from the careful sketch of a patient. You observe the left post-nasal orifice is occupied by a posterior hypertrophy, above the upper edge of which is faintly outlined an incipient thickening of the tissue over the vomer. The inferior turbinated tissue in the right naris has partially retracted, leaving on the vomer opposite its impress, a cup-shaped mass of thickened tissue. (This same condition can, of course, occur in anterior hypertrophy.)

Deviation of the nasal septum may, of course, be osseous or cartilaginous. Deviation of the bones which form part of the septum, is seldom sufficient to give rise to any immediate discomfort. It may, however, be the cause of hypertrophy of the superimposed tissues, which in turn may lead to a chronic nasal catarrh. Hence I can, without inconvenience, exclude from my system of operations, the removal of deviations of the plate of the ethmoid, vomer, and osseous spurs of the superior maxilla, since excision of the overlying tissue renders their removal unnecessary.

Deflection of the triangular cartilage and columna of the septum are, on account of their activity as agents in the production of catarrh, of extreme importance.

As the undisturbed foreign body in the nose of a child is invariably the cause of a chronic nasal catarrh, so the neglected cartilaginous splinter—a deviated septum—must lead with absolute certainty to the same result. The nares may be in all other respects symmetrical, and the person in perfect health; but I believe it impossible for the delicate nasal tissue to withstand so powerful and permanent an irritant. The trouble frequently dates from a blow received upon the nostril. These cases, as a rule, give the most favorable results when intelligently treated by my method of operating, as they so often occur in persons otherwise healthy. The mere removal of the cause of the disease must lead to a spontaneous cure.

I have found it convenient to divide deviation of the cartilaginous septum into two varieties, localized and general.

Localized deflection of the septum usually occurs in the form of the peculiar deformity produced by displacement of the columna nasi. It does not always set up catarrh by irritating the nasal mucous membrane, for it may be entirely outside of the nasal cavity. Even in these cases its excision is often called for to remove the distressing deformity.

General deviation of the septum may occur in the form of a sigmoid deflection; in which case both the upper and lower margins of the septum show a marked convexity, or a large mass of the triangular cartilage may be projected toward or against the nasal wall.

There always exists a corresponding concavity in marked general deviations. On the contrary, in the tissue formations occurring over the septum, no such depression can be found.

The wavy outline given to the septum by alternate masses of thickened tissue, in the cork-screw nostril, may simulate these depressions, but a careful examination will result in their easy differentiation.

In including gelatinous polypi under the head of nasal catarrh, I am aware of the fact that they are generally considered and treated as an independent variety of growths. I would be justified in speaking of them in this connection, were I to give as my only reason the production of nasal catarrh by their action as foreign bodies within the nostril. I am convinced that gelatinous nasal polypi often occur as a secondary manifestation in nasal catarrh. A few months ago I devoted much time and labor in removing a large mass of thickened tissue overlying the septum. The patient was suffering with chronic nasal catarrh. The left nostril was principally involved, and an operation was undertaken to relieve an intense hemicrania which invariably afflicted the patient in damp weather. I eventually opened a way to the superior meatus, and found a cluster of glistening bead-like gelatinous polypi occupying the roof of the nostril, which were removed and cauterized with chromic acid. I discovered that these were the cause of severe headache, for the patient was at once relieved. While recognizing the hygrometric nature of the growths as explaining the peculiar symptoms, I believe the thickened septum-tissues and the attendant nasal catarrh induced the formation of the polypi.

I have been impressed by the peculiar resemblance the surface of these growths sometimes bears to the mucous membrane over hypertrophies and in other parts of the nasal cavity. Although the majority of nasal polypi show little more than the familiar gelatinous translucency, I have met with a few of large size having a membranous envelope, containing numerous meshes of distinctly outlined blood-vessels. The blood-vessels diverged from the pedicles of the polypi, and were apparently a part of the nasal mucous membrane extended over their surface, in this respect presenting an analogy to the general structural changes which occur in hypertrophic nasal catarrh.

Adenoma of the vault of the pharynx resembles closely the ordinary glandular hypertrophical faucial tonsil. It is closely associated with the hypertrophic changes occurring in the posterior nares, and should therefore be included among nasal hypertrophies. In the practice of posterior rhinoscopy, it is only necessary to follow the upward sweep of the post-nasal arches to bring these glandular masses

in view. Although holding an important place in modern medical literature, they are, so far as my observation goes, of infrequent occurrence when compared with other structural changes in hypertrophic nasal catarrh. Hence, though recognizing them as a feature of the disease, I would assign them a place of secondary importance.

Instruments for the operations.—The *écraseur* consists of a long and short canula, the latter of which glides over a screw thread cut on the former. A milled nut, fitting this thread, is intended to push the outer canula before it. Well-tempered steel wire (No. 5 piano gauge) is drawn through the large canula, and its ends are attached to the retention pins on the small one. As the outer canula cannot turn, there is no twisting of the wire loop formed.

The combined mirror and tongue depressor.—A stout wire, after being made to divide and assume the form of a tongue depressor, is crossed upon itself and then shaped into a pincette. Mirrors of different sizes are received between the pincette's blades. These mirrors can be placed at any desirable angle with the shaft. The hinge-joint will permit the mirror to be fixed at the most favorable angle for viewing the posterior nares, and at the same time facilitate even depression of the tongue.

This instrument will be sometimes found a convenient one, as it enables the operator to bring the posterior nares in view with one hand, leaving the other free for the manipulation of the *écraseur*.

The tape-holders are intended to take the place of the unsatisfactory and disagreeable procedure of tying the ends of the tape which pass around the soft palate in cases requiring this procedure.

They are two small V-shaped spring clips so arranged that the tape passing through apertures in its blades is caught by a tooth-like projection and firmly held. Pressure on the spring releases the catch and sets the tape free. The transfixion needles need no special description. They are pointed like the ordinary glover's needle.

Four different sizes are made, running from one to four inches in length. Each number has a straight needle, and three others of varying curves. They are all furnished with a light convenient handle.

The septum scissors are light instruments with the blades curved almost at a right angle, in order to enable the operator to obtain an easy view of the cartilage to be removed.

One instrument is made somewhat after the pattern of Richardson's mouse-toothed scissors, the other has a sharp beak upon the upper blade, which sinks into the tissue of the septum, and thus enables the scissors' blades to retain their grasp, while cutting through the cartilage.

A ring in the fixation blade is intended to slip over the middle finger while the knob on the movable blade is managed with the thumb.

This simple arrangement enables one to hook and divide the cartilage of the septum with great facility.

I shall now speak of the method of dealing with the first condition mentioned in my paper, and will ask your attention to the operation devised by me for the removal of posterior hypertrophies.

The operation depends upon the shape of the hypertrophied turbinated bones.

The posterior surfaces of these bones, especially the inferior, show a peculiar constriction formed by the hypertrophied tissue extending backward into the upper pharynx. The extreme point of the growth is thus thrown beyond its base.

This constriction forms a 'nidus for the retention of the *écraseur* wire.

THE OPERATION.

In using the *écraseur*, pass the two ends of the wire through the main canula, entering them at its distal extremity, and twist them around the retention pins. A loop is formed, whose size, of course, depends upon that of the growth. Giving the wire loop a twist toward the side of the nose occupied by the growth, it is fixed by a turn of the nut and passed into the nostril.

Holding the rhinoscopic mirror in one hand, the position of the wire loop in the posterior nares is carefully watched, while it is steadily advanced with the other hand until seen to encircle the growth. On drawing the wire home the tissue is cleanly divided, and if not too large to pass through the nares, it will generally be drawn out clinging to the snare. Make traction very slowly, stopping at short intervals, in order to prevent hemorrhage. If the nostril is obstructed by a deviated septum, or narrowed by any other cause, it may be necessary to introduce the wire sheathed in the main canula, when, by projecting the loop within the naso-pharyngeal space, the growth can be readily snared.

The hemorrhage is trifling, provided slow traction is made.

So much for the removal of posterior hypertrophies. Soft sessile hypertrophies occurring in any part of the nostril can be easily removed, as the wire readily sinks into the tissue and takes firm hold on the growth. Firm non-pedunculated posterior hypertrophies require both *écraseur* and transfixion needle. In using the transfixion needle, the amount of tissue requiring removal is carefully determined, and the point of the needle directed accordingly. The loop will be caught by the point of the needle projecting into the nostril, and a few turns of the milled nut causes the wire to sever the transfixed tissue. In transfixing posterior hypertrophies, the position of the needle's point can be determined by the rhinoscopic mirror. Curved needles should be used in transfixing anterior hypertrophies, in order to bring the needle's point into view. A little practice will enable one to determine when complete transfixion has taken place, by the touch in cases where the needle's point cannot be seen. Nasal hypertrophies of every size and description can be permanently got rid of by this simple method. The discomfort caused in removing these growths will vary with the susceptibility of the patient to pain and the amount of care used in manipulating the *écraseur*. Patients, as a rule, declare they do not suffer.

A pledget of cotton thrust into the nostril will generally suffice to control any slight hemorrhage that may occur. It is not necessary to exercise much care to prevent bleeding from anterior hypertrophies, as the hemorrhage is but transient. On the contrary, much time and caution is required in removing posterior hypertrophies, as a protracted and profuse flow of blood may follow the excision of these tissues.

RESULTS OF THE OPERATIONS.

The immediate result of the operations is a restoration of free nasal respiration. As the nature of turbinated hypertrophies renders their return almost impossible, the establishment of free nasal breathing is permanent. Since the most intense inflammatory processes are centred in the tumefied tissues, their

removal does away with the active source of the disease. The remarkable cessation of the catarrhal secretion which often follows the removal of these growths, points to the cause and seat of the disease. Relief from the pressure removes the discharge. The multiplicity of glands in the turbinated tissue, makes it unnecessary to look for any other source for the secretion.

I pursue the same method mentioned in anterior hypertrophies in excising the localized and general thickenings over the septum. These projections, when situated anteriorly upon the triangular cartilage, can be readily removed. The localized hypertrophies found over the vomer are sometimes difficult to remove, as the tissue is transfixed and snared when pictured in the rhinoscopic mirror. Recognizing the floor of the nose as a gutter for the *efflux* of the nasal secretions, the thickened tissue over the septum often constitutes one of the most serious obstructions to drainage. There is probably no condition more favorable for the development of nasal catarrh than a distorted nasal gutter. Retention of the nasal secretions must lead to the formation of inspissated masses of mucus, which act as most powerful intra-nasal irritants. It is obvious that only temporary relief can be obtained in these conditions by the use of cleansing or medicated sprays.

When the thickened tissue is in contact with the outer wall of the nose, I make use of the No. 3 curved transfixion needle, which has its point at a right angle with the shaft. By successively hooking and snaring off pieces of the septum, it is possible to make an opening into the posterior nares. The patient practice of this method has enabled me to perforate even an imperforate nostril. Deviations of the cartilaginous septum can be easily removed in the same manner.

Especially brilliant results can be obtained in relieving the common deformity caused by displacement of the cartilage of the columna. Nasal stenosis caused by a deviated cartilage is always overcome by the careful practice of this method without perforating the septum. I would strongly urge this procedure to supply the place of the now general practice of perforating the septum with a punch. When the enthusiastic advocates of this operation explain away the years of discomfort caused by the collection and inspissation of nasal mucus around the edges of these false openings, I may consider their claims for its superiority.

The *écraseur* is particularly adapted for the removal of gelatinous polypi. The elastic loop can be easily made to enter a nostril filled with impacted polypi, and the fine steel ring will, with absolute certainty, engage each polyp in turn until the meatuses are completely cleared. It is not necessary to follow the loop with the eye, for when even a small part of the polyp has been encircled by the snare, each turn of the nut will draw the wire nearer to the pedicle. I believe a small portion of the mucous membrane at the base of the polypus is often removed with the growth, thus effectually preventing its return. The recurrence of gelatinous polypi may be referred to a development of the embryonic clusters I have already spoken of.

I attach much importance to the removal of every vestige of a nasal polypus, since an apparently insignificant growth of the kind may, by irritation, keep up a chronic nasal catarrh.

Professor Bosworth has successfully removed adenomata of the vault of the pharynx, by carrying

the *écraseur* armed with a large wire loop through the naso-pharyngeal space against the base of these glandular hypertrophies.

CONCLUSIONS.

In concluding, I would urge the adoption of these simple but effective methods for the removal of intra-nasal growths, as they possess manifold advantages over the other modes hitherto recommended. The painlessness of the operations in most cases, the small amount of blood lost, the ease with which they are performed and the decided and beneficial results obtained, all combine to make them valuable. The barbarous method of evulsion, with all its train of terrible suffering and torn and bleeding tissues, needs no comment. The use of the ligature and injection of acids, followed by the intended result, a mass of putrefying tissue in the delicate organ of smell, cannot be too strongly condemned. Those who have witnessed the manipulations of a galvano-cautery battery, with all its world of complicated attachments and ingenious movements, may with reason demand a simpler and more reliable mode of operating. I have intentionally omitted some of the minutiae of the operations, but trust and believe that, by giving them a fair trial, you will be satisfied with the results and convinced that my claims for their superiority are not overestimated.

123 EAST TWENTY-FIFTH STREET.

POISONING BY SULPHATE OF COPPER— HEMOGLOBINURIA—DEATH—AUTOPSY.

By M. ALLEN STARR, A.M., M.D.,

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THE patient, a well-nourished woman, aged forty-six, took about one ounce of sulphate of copper dissolved in tea, at 9 P.M., December 13th, with suicidal intent. As soon as she had swallowed it, she felt a burning sensation in her stomach and all over her body, and becoming alarmed she told a neighbor, who summoned a policeman. He took her at once to a station-house. On the way she vomited three or four times, and before reaching it began to feel very weak and to suffer from severe pain and cramps in her stomach. At the station-house she was given stimulants, and, on the arrival of the ambulance-surgeon, large draughts of warm water and flour. This produced free emesis. At 11 P.M., two hours after taking the poison, she was brought into Bellevue Hospital.

On admission, patient was very weak and unable to stand or to walk. Her surface was cool and dry; pulse, full, strong, 112 per minute; respiration natural, 24 per minute. She complained of faintness, and of cramps in her stomach and legs. She was put to bed at once, and the tube of the stomach-pump having been introduced, the stomach was washed out with warm water. It was noticed that the material first obtained from the stomach was grayish-green in color. This was afterward found to contain copper. After a few minutes yellow ferrocyanide of potassium was obtained, and twenty grains added to one pint of warm water. This was thrown into the stomach, and on being drawn out the water was seen to have assumed a brown color, indicating that the chemical change to ferrocyanide of copper had taken place. This injection was therefore continued, the amount of the potash salt being decreased as the brown color became less marked.

Catarrh -
Chronic Nasal. The
Surgical Treatment of.
by
William Chapman Jarvis M.D.
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Please cut down if too mild -

Jarvis, William Chapman M.D.

Cocaine (and Rhigolene)
in Intra Nasal Surgery
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